

**WHAT IS CLAIMED IS:**

1. A modulating device for modulating and demodulating data for transmission from a first device to a second device, comprising modulating means  
5 capable of modulating and demodulating the data according to at least a first and a second modulation technique using common digital modulation components.

2. The device according to claim 1, further comprising a plurality of building blocks, wherein at least one of said building blocks is used for at least one of  
10 modulating and demodulating data according to said at least first and second modulation techniques.

3. The device according to claim 2, wherein said at least one building block comprises:  
15 a programmable finite impulse response filter;  
a look-up table; and  
a serial-to-parallel converter.

4. The device according to claim 3, wherein said programmable finite impulse response filter is programmable to a first and a second mode for said first and  
20 second modulation techniques, respectively.

5. The device according to claim 4, wherein said programmable finite impulse response filter is used as a correlator in the first mode.  
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6. The device according to claim 4, wherein said programmable finite impulse response filter is used as matched filters in the second mode.

7. The device according to claim 3, wherein said programmable finite impulse response filter is adaptable by varying its weights.  
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8. The device according to claim 4, wherein said look-up table includes data related to said first and second modulation techniques.

5 9. The device according to claim 8, wherein said look-up table comprises n input words, m output words relating to said first modulation technique, and p output words relating to said second modulation technique, wherein  $n \geq m$  and  $n \geq p$ .

10 10. The device according to claim 9, wherein  $n > p$  and wherein only p input words are used for determining output words related to said second modulation technique.

15 11. The device according to claim 2, further comprising timing means adjustable to a first clocking time used for modulating and demodulating data according to said first modulation technique and a second clocking time used for modulating and demodulating data according to said second modulation technique.

12. The device according to claim 11, wherein said timing means comprises a serial-to-parallel converter.

20 13. The device according to claim 4, wherein said modulating means automatically switches between said first and second modes.

25 14. The device according to claim 1, wherein said first and second modulation techniques are Complementary Code Keying (CCK) with Differential Quadrature Phase Shift Keying (DQPSK) (CCK+DQPSK) and Gaussian Frequency Shift Keying (GFSK) modulation techniques.

30 15. The device according to claim 1, wherein said first and second modulation techniques are Quadrature Phase Shift Keying (QPSK) and Gaussian Frequency Shift Keying (GFSK) modulation techniques.

16. The device according to claim 1, wherein said first and second modulation techniques are a frequency modulation technique and a quadrature modulation technique.

5           17. An electronic device for communicating data to and receiving data from a second electronic device, the device comprising modulating means capable of modulating and demodulating the data according to at least a first and a second modulation technique using common digital modulation components.

10           18. A method for modulating data for transmission from a first device to a second device and demodulating modulated data suitable for a first modulation technique such that the data is modulated and demodulated according to at least a first and a second modulation technique, the method comprising providing a common digital modulation component used in both techniques.

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